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DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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DOGM
MINERALS PROGRAM
FILE COPY

December 7, 1989

Mr. Brent Willoughby
Manager - Escalante Unit
Hecla Mining Company
P.O. Box 310
Enterprise, Utah 84725

Dear Mr. Willoughby:

Re: Review of Proposal for Closure of Tailings Impoundment, Hecla Mining Company, Escalante Silver Mine, M/021/004, Iron County, Utah

The Division has completed its review of Hecla Mining Company's (Hecla) plan for closure of its tailings impoundment facility, located at the Escalante Silver Mine near Enterprise, Utah. The Division has also received review comments from the Bureau of Land Management (Cedar City District Office). Their comments are attached to this review letter. We are awaiting comments from the Utah State Department of Health. Their comments will be forwarded to you upon our receipt of same. Please address all other agency review comments as part of your overall response to this letter. We will forward copies of your future response to the respective agencies upon receipt.

DOGM COMMENTS:

R613-001-102.1.11 - Introduction, Applicability of Rules

On page 1, Introduction, of the operator's proposal, Hecla indicates that the Division's December 1988 amended rules do not apply to this proposal since the mining operation was approved in 1980. If this reclamation proposal had been approved as part of the original mining and reclamation plan for the Escalante Silver Mine, then this interpretation would be correct. However, since this reclamation proposal effectively supplements and revises a previously approved permit application, the new rules are applicable. The proposal has been reviewed accordingly.

R613-004-105.3.15 - Maps, Drawings, Photographs and R613-004-111.2 - Reclamation Practices

The operator has indicated on page 3, section 8.0, Drainages, that post-reclamation surface runoff will drain off from the impoundment area into peripheral side drainage ditches, which then drain into the permanent (100yr - 6hr) storm diversions.

The Division concurs with the concept, however, we request that the operator prepare a conceptualized design drawing(s) and cross-section(s), of the proposed post-reclamation drainage system for our review and approval.

R613-004-111.4 - Reclamation Practices, Deleterious Materials

On page 2, section 6.1, Ground Water Protection, the operator indicates that the tailings will be "washed" with diluted "underdrain" and reclaim solutions by mixing said solutions with fresh water. A 3-month "wash" period is proposed, to be followed by a 6-9 month period of underdrain solution recycling. The operator anticipates that no underdrain solution will remain for recycling after this time/period.

1. The Division will consult with State Health to determine whether or not the six to nine month treatment period for the tailing's pond solution is adequate. We assume that they will require that certain effluent standards be attained before the proposed washing and recycling plan is terminated. It is also possible that some other form of leaching, neutralization and/or complexing of the residual metals may be required as an alternative to the proposed fresh water leach.

On page 6, section 14.0, Closure Schedule, the operator has outlined the proposed schedule for closure and reclamation of the remaining mining facilities. The Division questions the proposed timing for initiation of the "tailing wash cycle". Given the history and extent of the wildlife mortality problems associated with the impoundment, we are concerned that the wash cycle will occur during the fall migratory period for waterfowl and other bird species. Expanding the flooded surface area of the impoundment will likely attract an increased number of migratory species. Until the cyanide in the recycled pond solutions reaches non-toxic levels, there is an increased risk that additional bird mortalities will occur.

2. The Division requests that the operator indicate how this potential problem will be managed or mitigated, or demonstrate that this will not be a problem. One suggestion would be to reschedule the washing phase such that it would coincide with the fall and spring migration patterns. Another solution might be to chemically neutralize or buffer the impoundment solutions.

The Division must obtain further information from the operator before approving the six inch layer of waste rock and four inch layer of topsoil proposed for covering the tailings material. We need to know the physical and chemical characteristics of the tailings material. The proposed cover may not be deep enough to maintain an adequate plant cover. If the plant roots reach into phytotoxic material, then long range revegetation problems could result.

Because the Division has not received a copy of the actual test results obtained from the analysis of the tailings material, we do not have a reasonable basis to evaluate the effectiveness of the present proposal. It is important to know what the composition of the material is, before we can determine how to properly manage its ultimate disposition. Depending upon the analytical results from the tailings material and the topsoil, fertilization may also be necessary to help assure successful revegetation.

3. Consequently, the Division requests that the operator provide copies of the tailings and topsoil sampling analytical test results. The copies must be made from the original lab reports provided by the company which performed the lab analyses. Please indicate if there were any deviations in the tailing sampling methodology or analytical testing from the recommendations outlined in our May 24, 1989 letter.

On page 4, section 9.0, the operator discusses abandonment of the ground water monitoring wells adjacent to the tailings impoundment.

4. The Division, BLM and State Health Department will need to concur when the monitoring of these wells should be terminated. The Division does not have sufficient information to accept the operator's opinion on well abandonment at this time. A final decision on monitoring well abandonment will be based upon the circumstances and extent of information available at the time of the operator's request for termination.

R613-004-111.13 - Revegetation

The operator asked if the original 1980 DOGM seedmix should be used for the tailings pond reclamation.

The Division will defer making a final recommendation on this seedmix until we have more information on the composition of the tailings material. We will consult with the BLM regarding their attached seedmix before finalizing a joint seedmix recommendation for the tailings pond. Depending upon the nature of the tailings material, deep-rooting plants may not be desirable.

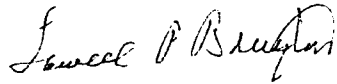
R613-004-111.9 - Dams and Impoundments

The operator intends to leave the present dike intact. The state engineer's office, Division of Water Rights, Dam Safety section will need to concur with this request.

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Mr. Brent Willoughby
M/021/004
December 7, 1989

Thank you for your cooperation in completing this reclamation proposal. Please contact me, Wayne Hedberg or Holland Shepherd of my staff should you have any questions or concerns with this review.

Sincerely,



Lowell P. Braxton
Associate Director, Mining

DWH/jb
Enclosures
cc: Paul Carter, BLM, Cedar City District Office
Wayne Thomas, State Health, Cedar City
Wayne Hedberg
Holland Shepherd
MN3/51-54